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#48646

Phospho-Akt (Thr308) (D25E6) XP[®] Rabbit mAb (Alexa Fluor[®] 647 Conjugate)



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Entrez-Gene ID #207, 208, 10000
UniProt ID #P31749, P31751, Q9Y243

New 11/16

For Research Use Only. Not For Use In Diagnostic Procedures.

Applications
F
Endogenous

Species Cross-Reactivity*
H, M, R, Mk

Isotype
Rabbit IgG

Description: This Cell Signaling Technology antibody is conjugated to Alexa Fluor[®] 647 fluorescent dye and tested in-house for direct flow cytometric analysis in mouse cells. The antibody is expected to exhibit the same species cross-reactivity as the unconjugated Phospho-Akt (Thr308) (D25E6) XP[®] Rabbit mAb #13038.

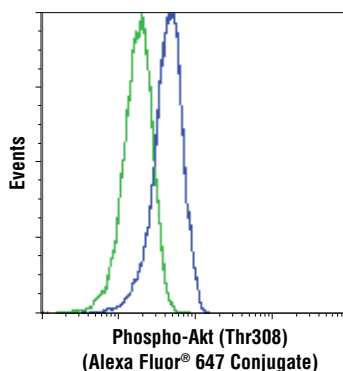
Background: Akt, also referred to as PKB or Rac, plays a critical role in controlling survival and apoptosis (1-3). This protein kinase is activated by insulin and various growth and survival factors to function in a wortmannin-sensitive pathway involving PI3 kinase (2,3). Akt is activated by phospholipid binding and activation loop phosphorylation at Thr308 by PDK1 (4) and by phosphorylation within the carboxy terminus at Ser473. The previously elusive PDK2 responsible for phosphorylation of Akt at Ser473 has been identified as mammalian target of rapamycin (mTOR) in a rapamycin-insensitive complex with rictor and Sin1 (5,6). Akt promotes cell survival by inhibiting apoptosis through phosphorylation and inactivation of several targets, including Bad (7), forkhead transcription factors (8), c-Raf (9), and caspase-9. PTEN phosphatase is a major negative regulator of the PI3 kinase/Akt signaling pathway (10). LY294002 is a specific PI3 kinase inhibitor (11). Another essential Akt function is the regulation of glycogen synthesis through phosphorylation and inactivation of GSK-3 α and β (12,13). Akt may also play a role in insulin stimulation of glucose transport (12). In addition to its role in survival and glycogen synthesis, Akt is involved in cell cycle regulation by preventing GSK-3 β -mediated phosphorylation and degradation of cyclin D1 (14) and by negatively regulating the cyclin dependent kinase inhibitors p27 Kip1 (15) and p21 Waf1/Cip1 (16). Akt also plays a critical role in cell growth by directly phosphorylating mTOR in a rapamycin-sensitive complex containing raptor (17). More importantly, Akt phosphorylates and inactivates tuberlin (TSC2), an inhibitor of mTOR within the mTOR-raptor complex (18,19).

Specificity/Sensitivity: Phospho-Akt (Thr308) (D25E6) XP[®] Rabbit mAb (Alexa Fluor[®] 647 Conjugate) recognizes endogenous levels of Akt1 protein only when phosphorylated at Thr308. This antibody also recognizes endogenous levels of Akt2 protein when phosphorylated at Thr309 or Akt3 protein when phosphorylated at Thr305.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Thr308 of human Akt1 protein.

Background References:

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- (12) Hajdúch, E. et al. (2001) *FEBS Lett* 492, 199-203.
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- (18) Inoki, K. et al. (2002) *Nat Cell Biol* 4, 648-57.



Flow cytometric analysis of serum-starved NIH/3T3 cells, untreated (blue) or treated with mouse platelet-derived growth factor BB (200 ng/ml, 15 min; green), using Phospho-Akt (Thr308) (D25E6) XP[®] Rabbit mAb (Alexa Fluor[®] 647 Conjugate).

Storage: Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

*Species cross-reactivity is determined by western blot using the unconjugated antibody.

Recommended Antibody Dilutions:

Flow Cytometry 1:50

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

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